=> fil reg; d stat que l17

FILE 'REGISTRY' ENTERED AT 16:26:41 ON 10 OCT 2000
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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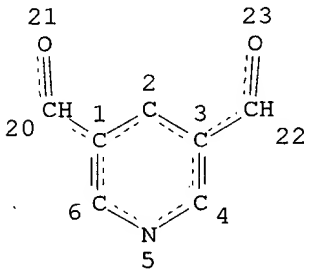
STRUCTURE FILE UPDATES: 9 OCT 2000 HIGHEST RN 294172-16-0
DICTIONARY FILE UPDATES: 9 OCT 2000 HIGHEST RN 294172-16-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 11, 2000

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Structure search limits have been increased. See HELP SLIMIT for details.

L15 STR



Searched this broad structure to accommodate the way the applicants own work was indexed in Caplus.

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L17 167 SEA FILE=REGISTRY SSS FUL L15

100.0% PROCESSED 77941 ITERATIONS 167 ANSWERS
SEARCH TIME: 00.00.02

=> fil caplus; d que nos l19; d que nos l23

FILE 'CAPLUS' ENTERED AT 16:27:12 ON 10 OCT 2000
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1967 - 10 Oct 2000 VOL 133 ISS 16
Searched by Barb O'Bryen & Toby Port

FILE LAST UPDATED: 9 Oct 2000 (20001009/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REGistRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

Now you can extend your author, patent assignee, patent information, and title searches back to 1907. The records from 1907-1966 now have this searchable data in CAOLD. You now have electronic access to all of CA: 1907 to 1966 in CAOLD and 1967 to the present in CAPLUS on STN.

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L15              STR
L17          167 SEA FILE=REGISTRY SSS FUL L15
L18           65 SEA FILE=CAPLUS ABB=ON  PLU=ON  L17
L19            7 SEA FILE=CAPLUS ABB=ON  PLU=ON  L18 (L) (PROTEIN# OR ?PEPTIDE?
                 OR ?LYSINE?)
```

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L15              STR
L17          167 SEA FILE=REGISTRY SSS FUL L15
L18           65 SEA FILE=CAPLUS ABB=ON  PLU=ON  L17
L20       362124 SEA FILE=CAPLUS ABB=ON  PLU=ON  LIVER
L21        10660 SEA FILE=CAPLUS ABB=ON  PLU=ON  ?CIRRHO?
L22        26293 SEA FILE=CAPLUS ABB=ON  PLU=ON  ?HEPATIT?
L23            5 SEA FILE=CAPLUS ABB=ON  PLU=ON  L18 AND ((L20 OR L21 OR L22))
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=> s l19 or l23

L27            11 L19 OR L23

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L27 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1998:796190 CAPLUS

DOCUMENT NUMBER: 130:164288

TITLE: Observation of a New Nonfluorescent Malondialdehyde-Acetaldehyde-Protein Adduct by 13C NMR Spectroscopy

AUTHOR(S): Kearley, Mark L.; Patel, Arti; Chien, Jim; Tuma, Dean J.

CORPORATE SOURCE: Department of Chemistry, Creighton University, Omaha, NE, 68178, USA

SOURCE: Chem. Res. Toxicol. (1999), 12(1), 100-105
CODEN: CRTOEC; ISSN: 0893-228X

PUBLISHER: American Chemical Society

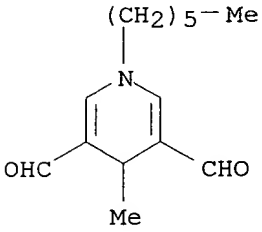
DOCUMENT TYPE: Journal

LANGUAGE: English

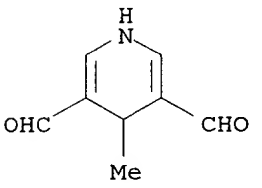
AB It has been shown that malondialdehyde (MDA) and acetaldehyde react with proteins via the .epsilon.-amino group of a lysine residue to yield hybrid MDA-acetaldehyde (MAA)-protein adducts. The structure of one MAA adduct has been confirmed to be 4-methyl-1,4-dihydropyridine-3,5-dicarbaldehyde (I). In this study, 13C NMR spectroscopy was used to identify the structure of a second MAA adduct as 2-formyl-3-(alkylamino)butanal (II). Isotopically labeled [1-13C]acetaldehyde was reacted with MDA and the protein, bovine serum albumin, under a variety of conditions, and the

reactions were monitored at various time intervals by 13C NMR. In each expt., new signals grew in at 50 and 22 ppm. By comparison to model compds., the signals at 50 ppm correspond to a 2-formyl-3-(alkylamino)butanal adduct and the signals at 22 ppm correspond to the known 1,4-dihydropyridine-3,5-dicarbaldehyde adduct. Similar results were found when the BSA was replaced with polylysine. Overall, it appears that MAA-protein adducts are composed of two major products, I and II.

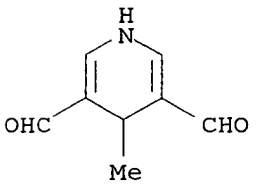
IT **80840-97-7**
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(new nonfluorescent malondialdehyde-acetaldehyde-**protein** adduct by 13C NMR spectroscopy)
RN 80840-97-7 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1-hexyl-1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)



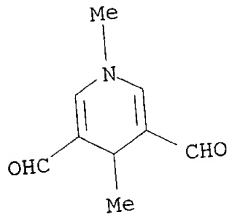
IT **71970-43-9D**, 4-Methyl-1,4-dihydropyridine-3,5-dicarbaldehyde, **protein** adducts
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(new nonfluorescent malondialdehyde-acetaldehyde-**protein** adduct by 13C NMR spectroscopy)
RN 71970-43-9 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)



IT **71970-43-9 78524-77-3**
RL: NUU (Nonbiological use, unclassified); PRP (Properties); USES (Uses)
(new nonfluorescent malondialdehyde-acetaldehyde-**protein** adduct by 13C NMR spectroscopy)
RN 71970-43-9 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)



RN 78524-77-3 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-1,4-dimethyl- (9CI) (CA INDEX NAME)



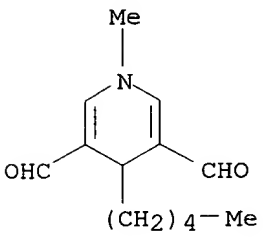
REFERENCE COUNT: 14
REFERENCE(S):
(1) Beppu, M; Chem Pharm Bull 1988, V36, P4519 CAPLUS
(3) Eisner, U; Chem Rev 1972, V72, P1 CAPLUS
(4) Kikugawa, K; Chem Pharm Bull 1986, V34, P1794 CAPLUS
(5) Kikugawa, K; Lipids 1984, V19, P600 CAPLUS
(6) McConnell, R; J Org Chem 1998, V63, P5648 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:554521 CAPLUS
DOCUMENT NUMBER: 129:301235
TITLE: Antioxidative activity of nonenzymically browned proteins by reaction with lipid oxidation products
AUTHOR(S): Hidalgo, Francisco J.; Alaiz, Manuel; Zamora, Rosario
CORPORATE SOURCE: Instituto de la Grasa, CSIC, Seville, 41012, Spain
SOURCE: Spec. Publ. - R. Soc. Chem. (1998), 223(Maillard Reaction in Foods and Medicine), 225-230
CODEN: SROCDO; ISSN: 0260-6291
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Three oxidized lipid/amino acid reaction products (OLAARP): 1-methyl-4-pentyl-1,4-dihydropyridine-3,5-dicarbaldehyde, 1-(5'-amino-1'-carboxypentyl)pyrrole, and N-(carbobenzyloxy)-1(3)-(1'-(formyl(methyl)-hexyl)-L-histidine dihydrate), and two browned proteins (the monomer and the dimer produced in the reaction between BSA and 4,5(E)-epoxy-2(E)-heptenal) were prepd. and tested for antioxidative activity in a microsomal system in order to investigate the antioxidative function of OLAARP and non-enzymically browned proteins in biol. systems. The microsomal system consisted of freshly prepd. trout muscle microsomes, which were oxidized with Cu2+, Fe3+/ascorbate, or Cu2+/H2O2 at 37.degree. and in the presence of the compd. to be tested as antioxidant. The three OLAARP (tested at 50 .mu.M) and the two browned proteins (tested at 40 .mu.g/mL) efficiently protected against lipid peroxidn., assessed by the formation of thiobarbituric acid-reactive substances, and protein damage, detd. by amino acid anal. These results suggest that the formation of non-enzymically browned proteins by reaction with lipid oxidn. products may constitute an antioxidative defense mechanism, which could play a significant role in vivo.

IT **94078-07-6**
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(antioxidative activity of nonenzymically browned **proteins** and oxidized lipid/amino acid reaction products as an antioxidative defense mechanism)

RN 94078-07-6 CAPLUS

CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-1-methyl-4-pentyl- (9CI) (CA INDEX NAME)

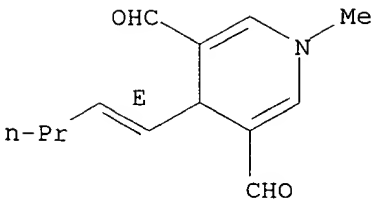


L27 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:259037 CAPLUS
DOCUMENT NUMBER: 129:26068
TITLE: Blue fluorescence generated during lipid oxidation of rat **liver** microsomes cannot be derived from malonaldehyde but can be from other aldehyde species
AUTHOR(S): Inoue, Tadamichi; Kikugawa, Kiyomi
CORPORATE SOURCE: School of Pharmacy, Tokyo University of Pharmacy and Life Science (Formerly Tokyo College of Pharmacy), Tokyo, 192-0392, Japan
SOURCE: Biol. Pharm. Bull. (1998), 21(4), 319-325
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Generation of blue fluorescence together with phospholipid hydroperoxides and aldehyde species in rat **liver** microsomes during oxidn. with FeCl2-ADP-ascorbic acid was monitored, and the kind of lipid oxidn. products participating in the formation of blue fluorescence was investigated. Contents of phospholipid hydroperoxides increased in the early stages of oxidn., and decreased in the more advanced stages of oxidn. Contents of components that liberated malonaldehyde, 4-hydroxyalkenals and other unsatd. aldehydes under the acidic assay conditions were increased in the advanced stage of oxidn. Water-sol. blue fluorescence with a max. at 440-450 nm detd. after sepn. through gel filtration accumulated in the advanced stage of oxidn., and was characterized as resistant to borohydride treatment and to be little dependent on pH values of the solvent. Wavelength of the max. fluorescence and characteristics of the fluorescence were similar to those of fluorescence with maxima at 440-450 nm formed by reaction of unoxidized microsomes, bovine serum albumin or methylamine with alkenals, and different from those of fluorescence with maxima at above 460 nm obtained by the reaction with a mixt. contg. malonaldehyde. Hence, blue fluorescence accumulated in oxidized microsomes cannot be derived from free malonaldehyde but can be from other aldehyde species including alkenals.

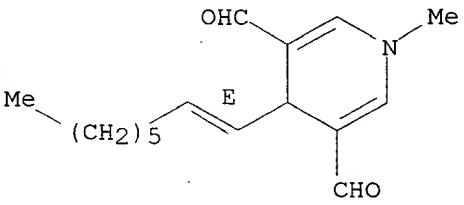
IT **208119-83-9P 208119-84-0P 208119-85-1P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(origin of the blue fluorescent species formed in lipid epoxidn. in **liver** microsomes)
RN 208119-83-9 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-1-methyl-4-(1E)-1-pentenyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



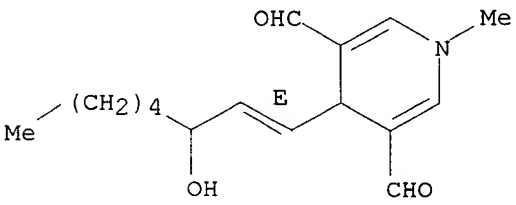
RN 208119-84-0 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-1-methyl-4-(1E)-1-octenyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 208119-85-1 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-[(1E)-3-hydroxy-1-octenyl]-1-methyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

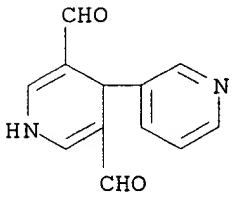


L27 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1997:642074 CAPLUS
DOCUMENT NUMBER: 127:327909
TITLE: Protein modification by lipid peroxidation products: formation of malondialdehyde-derived N.epsilon.-(2-propenal)lysine in proteins
AUTHOR(S): Uchida, Koji; Sakai, Kensuke; Itakura, Koichi; Osawa, Toshihiko; Toyokuni, Shinya
CORPORATE SOURCE: Lab. Food Biodynamics, Nagoya Univ. Sch. Agric. Sci., Nagoya, 464-01, Japan
SOURCE: Arch. Biochem. Biophys. (1997), 346(1), 45-52
CODEN: ABBIA4; ISSN: 0003-9861
PUBLISHER: Academic
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Malondialdehyde (MDA), a naturally occurring dialdehyde produced in the membrane lipid peroxidn., is known to react with lysine residues of proteins, but the MDA-lysine adducts generated in the proteins have not been characterized adequately. In the present study, we provide evidence that the enaminal-type MDA-lysine adduct, N.epsilon.-(2-propenal)lysine, is formed in human low-d. lipoprotein (LDL) upon reaction with MDA or

Cu2+. We found that the incubation of N.alpha.-acetyllysine with MDA generated N.alpha.-acetyl-N.epsilon.-(2-propenal)lysine as the predominant product. In addn., a polyclonal antiserum raised against the MDA-modified protein was found to contain antibody populations that could be purified by affinity gel prepd. by covalent attachment of N.alpha.-acetyl-N.epsilon.-(2-propenal)lysine. It was concluded that the affinity-purified anti-N.epsilon.-(2-propenal)lysine antibody was highly specific to the enaminal deriv. of both lysine residues and phosphatidylethanolamine, based on the observations that (i) MDA was the only aldehyde which generated immunoreactive materials in proteins; (ii) among structurally defined MDA-lysine adducts tested, the antibody recognized the enaminal adduct only; and (iii) immunoreactivity to N-(2-propenal)serine was still significant but much weaker than its reactivity to N-(2-propenal)ethanolamine. Furthermore, anal. of antibody recognition sites with a variety of N-(2-propenal)alkylamines revealed that the mono-specific antibody recognized the N-2-propenal-N-Et moiety [-(CH2)2-NH-CH=CH-CHO] of enaminal adducts. Detn. by a competitive ELISA demonstrated that N.epsilon.-(2-propenal)lysine accounted for 33.7 and 3.1% of the lysine residues that disappeared during in vitro incubation of LDL with MDA and Cu2+, resp. These results suggest that N.epsilon.-(2-propenal)lysine represents a major form of MDA covalently attached to proteins.

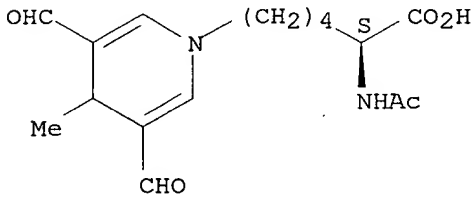
IT **197902-74-2D**, derivs. **197902-75-3D**, derivs.
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(formation of malondialdehyde-derived N.epsilon.-(2-propenal) **lysine** in **protein** modification by lipid peroxidn. products)

RN 197902-74-2 CAPLUS
CN [3,4'-Bipyridine]-3',5'-dicarboxaldehyde, 1',4'-dihydro- (9CI) (CA INDEX NAME)



RN 197902-75-3 CAPLUS
CN 1(4H)-Pyridinehexanoic acid, .alpha.-(acetylamino)-3,5-diformyl-4-methyl-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L27 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1997:603204 CAPLUS
DOCUMENT NUMBER: 127:217337
TITLE: Epitope Characterization of Malondialdehyde-
Searched by Barb O'Bryen & Toby Port

Acetaldehyde Adducts Using an Enzyme-Linked Immunosorbent Assay

AUTHOR(S): Xu, Dongsheng; Thiele, Geoffrey M.; Kearley, Mark L.; Haugen, Mark D.; Klassen, Lynell W.; Sorrell, Michael F.; Tuma, Dean J.

CORPORATE SOURCE: Department of Veterans Affairs Alcohol Research Center and Departments of Internal Medicine Biochemistry Molecular Biology and Pathology Microbiology, University of Nebraska Medical Center, Omaha, NE, 68105, USA

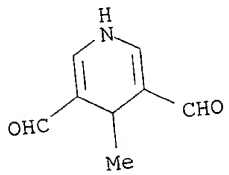
SOURCE: Chem. Res. Toxicol., (1997), 10(9), 978-986
CODEN: CRTOEC; ISSN: 0893-228X
September

PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

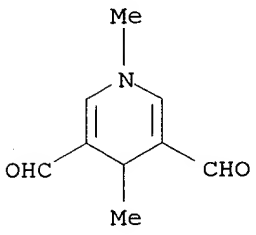
AB Malondialdehyde (MDA) and acetaldehyde react together with proteins in a synergistic manner and form hybrid protein adducts, designated as MAA adducts. In a previous study, a polyclonal antibody specific for MAA-protein adducts was used in an immunoassay to detect the presence of MAA adducts in **livers** of ethanol-fed rats. In the present study, the specific epitope recognized by the antibody was defined and the chem. of MAA adduct formation was further characterized. When several synthetic analogs were tested for their ability to inhibit antibody binding in a competitive ELISA, the results indicated that the major determinant of antibody binding was a highly fluorescent cyclic adduct composed of two mols. of MDA and one of acetaldehyde. The structure of this adduct was shown to be a 4-methyl-1,4-dihydropyridine-3,5-dicarbaldehyde deriv. of an amino group of a protein. Examn. of MAA adduct formation with a variety of proteins indicated that in addn. to this specific fluorescent adduct, MAA adducts were also comprised of other non-fluorescent products. The amt. of fluorescent epitopes present on a given protein was the major determinant of antibody binding as assessed in a competitive ELISA, although the efficiency of inhibition of antibody binding by these fluorescent epitopes on MAA-adducted proteins varied depending upon the particular protein. However, when these MAA-adducted proteins were hydrolyzed with Pronase, the concn. of these modified proteins necessary to achieve 50% inhibition of antibody binding in a competitive ELISA fell into a much narrower range of values, indicating that protein hydrolysis equalized the accessibility of the antibody to bind the epitope on these various derivatized proteins. In summary, a cyclic fluorescent adduct of defined structure has been identified as the epitope recognized by our MAA adduct antibody. In addn. to this specific adduct, MAA adducts are also comprised of other non-fluorescent products.

IT **71970-43-9P 78524-77-3P 80840-97-7P 194999-57-0P 194999-58-1P 194999-59-2P 194999-60-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (epitope characterization of malondialdehyde-acetaldehyde adducts using ELISA)

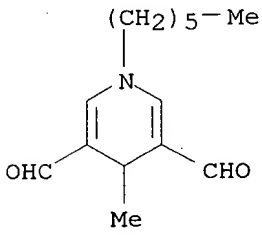
RN 71970-43-9 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)



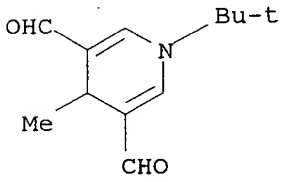
RN 78524-77-3 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-1,4-dimethyl- (9CI) (CA INDEX NAME)



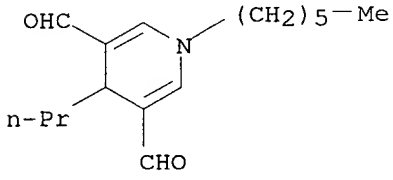
RN 80840-97-7 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1-hexyl-1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)



RN 194999-57-0 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1-(1,1-dimethylethyl)-1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)

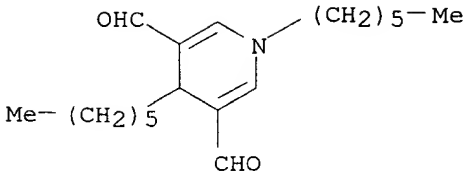


RN 194999-58-1 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1-hexyl-1,4-dihydro-4-propyl- (9CI) (CA INDEX NAME)

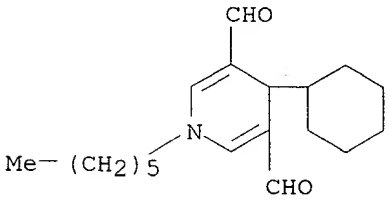


RN 194999-59-2 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihexyl-1,4-dihydro- (9CI) (CA INDEX NAME)

Searched by Barb O'Bryen & Toby Port



RN 194999-60-5 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 4-cyclohexyl-1-hexyl-1,4-dihydro- (9CI) (CA INDEX NAME)

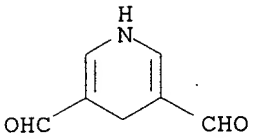


L27 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1997:410650 CAPLUS
DOCUMENT NUMBER: 127:30338
TITLE: Novel acetaldehyde and malondialdehyde protein adducts as markers for alcohol **liver** disease
INVENTOR(S): Thiele, Geoffrey M.; McDonald, Thomas L.; Tuma, Dean J.; Klassen, Lynell W.; Sorrell, Michael F.
PATENT ASSIGNEE(S): Board of Regents of the University of Nebraska, USA; Thiele, Geoffrey M.; Mcdonald, Thomas L.; Tuma, Dean J.; Klassen, Lynell W.; Sorrell, Michael F.
SOURCE: PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9715599	A1	19970501	WO 1996-US17833	19961025
W: AU, CA, JP, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9711173	A1	19970515	AU 1997-11173	19961025
US 5939535	A	19990817	US 1997-817018	19970408
PRIORITY APPLN. INFO.:			US 1995-5929	19951027
			WO 1996-US17833	19961025

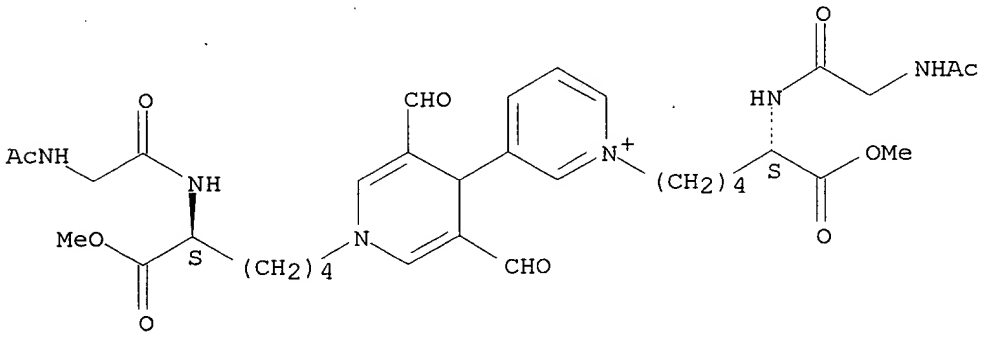
OTHER SOURCE(S): MARPAT 127:30338
AB A novel protein adduct is disclosed which is assocd. with the presence of alc. **liver** disease. The adduct is a hybrid product of malondialdehyde and acetaldehyde which act synergistically to bind hepatic proteins. The adduct is highly immunogenic and fluorescent. Methods of detection are also disclosed including monoclonal and polyclonal antibodies.
IT **61354-90-3**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(alkyl or benzyl derivs. and **protein** adducts; novel acetaldehyde and malondialdehyde **protein** adducts as markers

for alc. **liver** disease)
RN 61354-90-3 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro- (9CI) (CA INDEX NAME)



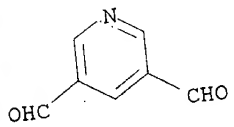
L27 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1996:692878 CAPLUS
DOCUMENT NUMBER: 126:56934
TITLE: A novel fluorescent malondialdehyde-lysine adduct
AUTHOR(S): Itakura, Koichi; Uchida, Koji; Osawa, Toshihiko
CORPORATE SOURCE: Faculty of Education, Aichi University of Education, Kariya, Japan
SOURCE: Chem. Phys. Lipids (1996), 84(1), 75-79
CODEN: CPLIA4; ISSN: 0009-3084
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A novel type of fluorescent product derived from the reaction of the lysine residue with malondialdehyde (MDA) was reported. When the lysine-contg. peptide (N-acetyl-glycyl-L-lysine Me ester) was treated with MDA prepd. by the acid hydrolysis of 1,1,3,3-tetramethoxypropane, the main fluorescent product, which corresponded neither to the 1-amino-3-iminopropene deriv. nor to the 4-methyl-1,4-dihydro-3,5-dicarbaldehyde deriv., was detected by reverse-phase HPLC. By anal. of its UV, NMR, and high-resoln. FAB mass spectra, it was confirmed to be 1-[5-carboxymethyl-5-(N-acetylglycylamino)pentyl]-3-[1-(5-carboxymethyl-5-(N-acetylglycylamino)pentyl)-3,5-diformyl-1,4-dihydropyridin-4-yl]pyridinium. This finding may provide a new clue to the formation mechanisms of fluorescent lipofuscin-like pigment.
IT **185301-71-7P**
RL: ANT (Analyte); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(a novel fluorescent malondialdehyde-**lysine** adduct)
RN 185301-71-7 CAPLUS
CN 3,4'-Bipyridinium, 1,1'-bis[5-[[(acetylamino)acetyl]amino]-6-methoxy-6-oxohexyl]-3',5'-diformyl-1',4'-dihydro-, [S-(R*,R*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



Searched by Barb O'Bryen & Toby Port

L27 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1995:58777 CAPLUS
DOCUMENT NUMBER: 122:161298
TITLE: A general method for coupling unprotected peptides to bromacetamido porphyrin templates
AUTHOR(S): Choma, Christin T.; Kaestle, Karen; Akerfeldt, Karin S.; Kim, Ronald M.; Groves, John T.; DeGrado, William F.
CORPORATE SOURCE: DuPont Merck Pharmaceuticals, Experimental Station, Wilmington, DE, 19880-0328, USA
SOURCE: Tetrahedron Lett. (1994), 35(34), 6191-4
CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 122:161298
AB An N-terminal cysteine is used to displace bromide from a bromoacetylated porphyrin to yield a thioether linkage between the peptide and the template. Unlike amide coupling reactions, this approach should be compatible with any peptide sequence provided there is only a single cysteine.
IT **6221-04-1P**, Pyridine-3,5-dicarboxaldehyde
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(displacement of bromide from bromoacetylated porphyrin by cysteine **peptide** to yield a thioether linkage between the **peptide** and the template)
RN 6221-04-1 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde (7CI, 8CI, 9CI) (CA INDEX NAME)



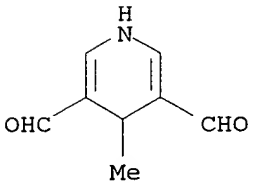
L27 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1989:171594 CAPLUS
DOCUMENT NUMBER: 110:171594
TITLE: Interaction of malondialdehyde-modified bovine serum albumin and mouse peritoneal macrophages
AUTHOR(S): Beppu, Masatoshi; Fukata, Yuzo; Kikugawa, Kiyomi
CORPORATE SOURCE: Tokyo Coll. Pharm., Hachioji, 192-03, Japan
SOURCE: Chem. Pharm. Bull. (1988), 36(11), 4519-26
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Reaction of bovine serum albumin (BSA) with malondialdehyde (MDA), a product of lipid oxidn., resulted in the modification of amino residues of the protein to produce 3 kinds of adducts in the protein mols., aminopropenal (I), N,N'-disubstituted 1-amino-3-iminopropene (II), and 4-methyl-1,4-dihydropyridine-3,5-dicarbaldehyde (III). Modified BSA, in which 39 out of the total of 60 amino residues were modified, showed effective binding to thioglycollate-induced mouse peritoneal macrophages. MDA-modified BSA inhibited the binding of formaldehyde-modified BSA to the macrophages, indicating that MDA-modified BSA binds to the scavenger receptor for formaldehyde-modified BSA. However, the converse was not the case, suggesting that MDA-modified BSA binds to addnl. receptors to which formaldehyde-modified BSA does not. Redn. of the double bonds of I and II, and the aldehyde functions of I and III in MDA-modified BSA did not affect the binding of the protein. However, modification of the aldehyde

function of I with glycine resulted in loss of the ligand activity of the protein. Apparently, adducts I, II, and III in the BSA mol. are not directly involved in the binding to the scavenger receptor of the macrophages, though adduct I may be located near the binding site or may play a role in maintaining the active conformation of the binding site.

IT **71970-43-9D, protein** adducts
RL: BIOL (Biological study)
(peritoneal macrophages binding by, scavenger receptors in relation to)

RN 71970-43-9 CAPLUS

CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)



L27 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1989:53979 CAPLUS

DOCUMENT NUMBER: 110:53979

TITLE: Determination of malonaldehyde in oxidized lipids by the Hantzsch fluorometric method

AUTHOR(S): Kikugawa, Kiyomi; Kato, Tetsuta; Iwata, Atsushi

CORPORATE SOURCE: Tokyo Coll. Pharm., Hachioji, 192-03, Japan

SOURCE: Anal. Biochem. (1988), 174(2), 512-21
CODEN: ANBCA2; ISSN: 0003-2697

DOCUMENT TYPE: Journal

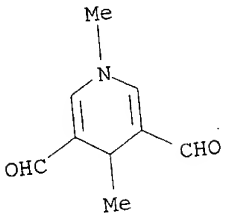
LANGUAGE: English

AB A sensitive and reliable Hantzsch fluorometric method was developed for detn. of malonaldehyde in oxidized lipids. The principle of the method is based on the formation of highly fluorescent 1,4-dimethyl-1,4-dihydropyridine-3,5-dicarbaldehyde MI by reaction of malonaldehyde, methylamine, and acetaldehyde under neutral conditions. Compd. MI formed could be estd. by HPLC. Free malonaldehyde, that liberated under neutral conditions (labile forms), and that liberated by acid pretreatment (acid labile forms) could be detd. by use of the calibration curves of MI vs. malonaldehyde Na salt. Oxidized Me linoleate with a peroxide value of 1600 neg/mg contained 0.95 (free and labile) and 1.3 nmol (acid labile) malonaldehyde/mg, oxidized sardine oil with a peroxide values of 640 neq/mg contained 1.1 (free and labile) and 3.0 nmol (acid labile) malonaldehyde/mg, and the lipid fraction of oxidized rat **liver** microsomes contained <0.2 (free and labile) and 0.8 nmol (acid labile) malonaldehyde/mg. The malonaldehyde contents were much lower than those obtained by traditional 2-thiobarbituric acid test. Apparently, the malonaldehyde contents, both free and labile, and acid labile forms, in oxidized lipids are too low to be taken into account.

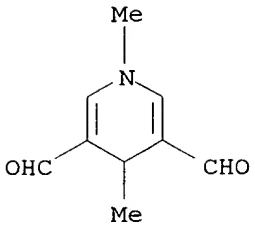
IT **78524-77-3**, 1,4-Dimethyl-1,4-dihydropyridine-3,5-dicarbaldehyde
RL: FORM (Formation, nonpreparative)
(formation of, in malonaldehyde detn. in oxidized lipids by Hantzsch fluorometric method)

RN 78524-77-3 CAPLUS

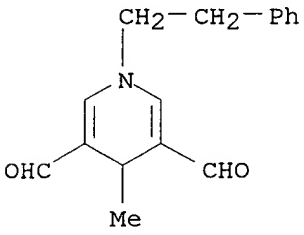
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-1,4-dimethyl- (9CI) (CA INDEX NAME)



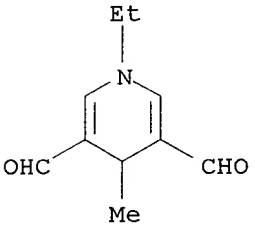
L27 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1986:18235 CAPLUS
DOCUMENT NUMBER: 104:18235
TITLE: Degradation of fluorescent substances derived from malondialdehyde and amino compounds in rat **liver** microsomes
AUTHOR(S): Yoden, Kazuaki; Matsuzaki, Reiko; Iio, Toshihiro; Tabata, Toshikazu
CORPORATE SOURCE: Showa Coll. Pharm. Sci., Tokyo, 154, Japan
SOURCE: Yakugaku Zasshi (1985), 105(9), 855-61
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB The degrdn. of fluorescent substances, N-substituted-1,4-dihydropyridine-3,5-dialdehyde derivs., derived from the reaction of malondialdehyde (MDA), which is one of the end-degradative products during lipid peroxidn., with various amino compds., was studied in rat **liver** microsomal fractions as a model for accumulation and metab. of lipofuscins. The MDA initially forms a conjugated Schiff base with the amines at >1 mol. MDA/amine, and this Schiff base forms the dihydropyridine deriv. The fluorescent substances from the reaction of MDA with 1-aminopentane, 1-aminoheptane, 1-aminodecane, and phenylethylamine (PEA) rapidly changed into water-sol. compds. On the other hand, the fluorescent compds. from short-length amino compds. such as methylamine had a little or no change. The degrdn. system required NADP and was inhibited by CO. Furthermore, in microsomal fractions from phenobarbital-pretreated rats, the rate of degrdn. increased. The degradative compds. of the fluorescent substance from MDA with [14C]phenylethylamine were sepd. by HPLc. Two major water-sol. fluorescent compds., 4-methyl-1,4-dihydropyridine-3,5-dialdehyde and 1-phenylethyl-4-hydroxy-4-methyl-1,4-dihydropyridine-3,5-dialdehyde, and minor fat-sol. fluorescent compds. were isolated. All of these isolated degradative compds. retained 1,4-dihydropyridine structure, and exhibited also the same max. excitation and emission spectra at 392 and 448 nm, resp., as those of the native fluorescent substance. The microsomal degrdn. of fluorescent substances related to MDA (apparently involving cytochrome P 450) evidently was dependent on the structure of the N-alkyl side-chain of the amino compds.
IT **78524-77-3 84269-60-3 99506-68-0 99506-69-1 99506-70-4 99506-71-5 99506-72-6 99506-73-7 99506-75-9**
RL: PRP (Properties)
(degrdn. of, by **liver** microsomes)
RN 78524-77-3 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-1,4-dimethyl- (9CI) (CA INDEX NAME)



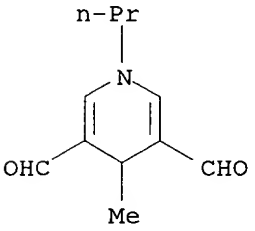
RN 84269-60-3 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl-1-(2-phenylethyl)- (9CI) (CA INDEX NAME)



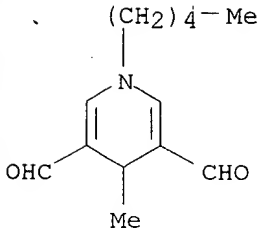
RN 99506-68-0 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1-ethyl-1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)



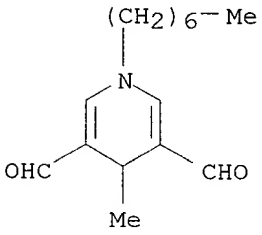
RN 99506-69-1 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl-1-propyl- (9CI) (CA INDEX NAME)



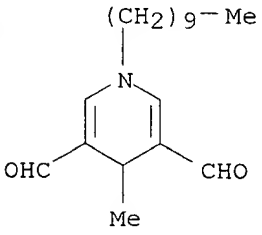
RN 99506-70-4 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl-1-pentyl- (9CI) (CA INDEX NAME)



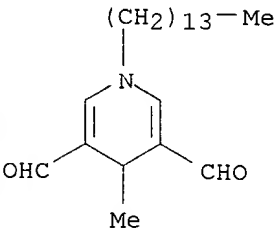
RN 99506-71-5 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1-heptyl-1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)



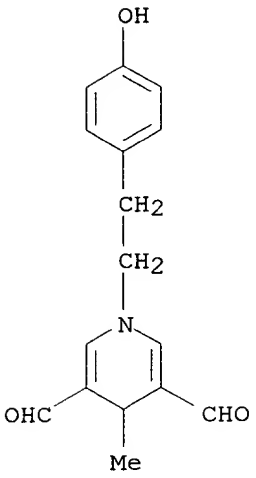
RN 99506-72-6 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1-decyl-1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)



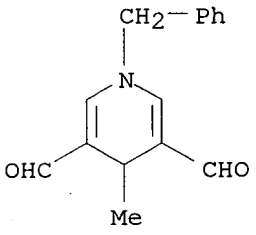
RN 99506-73-7 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl-1-tetradecyl- (9CI) (CA INDEX NAME)



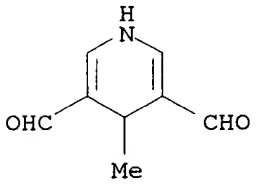
RN 99506-75-9 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-1-[2-(4-hydroxyphenyl)ethyl]-4-methyl- (9CI) (CA INDEX NAME)



IT **99506-74-8**
RL: PRP (Properties)
(degrdn. of, by **liver** microsomes, products and mechanism of)
RN 99506-74-8 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl-1-(phenylmethyl)- (9CI) (CA INDEX NAME)

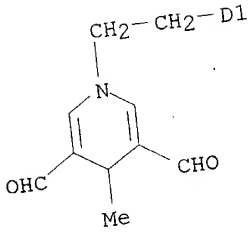


IT **71970-43-9 99491-47-1 99506-76-0**
RL: FORM (Formation, nonpreparative)
(formation of, from malondialdehyde-phenylethylamine reaction product by **liver** microsomes, cytochrome P 450 in)
RN 71970-43-9 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-methyl- (9CI) (CA INDEX NAME)

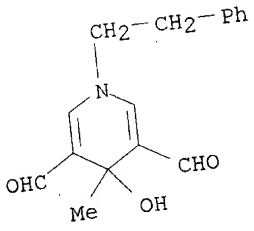


RN 99491-47-1 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-1-[2-(hydroxyphenyl)ethyl]-4-methyl- (9CI) (CA INDEX NAME)

D1— OH



RN 99506-76-0 CAPLUS
CN 3,5-Pyridinedicarboxaldehyde, 1,4-dihydro-4-hydroxy-4-methyl-1-(2-phenylethyl)- (9CI) (CA INDEX NAME)



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FILE 'REGISTRY' ENTERED AT 16:28:43 ON 10 OCT 2000
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STRUCTURE FILE UPDATES:     9 OCT 2000  HIGHEST RN 294172-16-0
DICTIONARY FILE UPDATES:    9 OCT 2000  HIGHEST RN 294172-16-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 11, 2000

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Structure search limits have been increased.  See HELP SLIMIT
for details.
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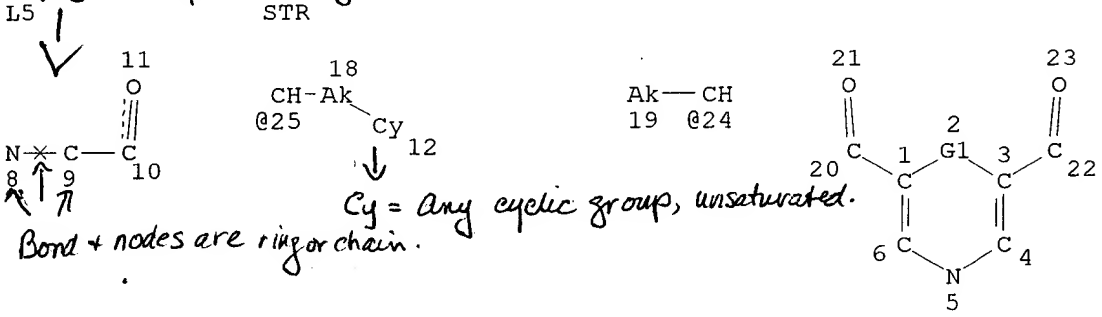
This fragment represents any amino acid.

L5 STR



Cy = any cyclic group, unsaturated.

Bond + nodes are ring or chain.

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VAR G1=24/25/CH2
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NSPEC   IS RC     AT   8
NSPEC   IS RC     AT   9
CONNECT IS E3  RC AT   5
CONNECT IS E2  RC AT  18
CONNECT IS E1  RC AT  19
DEFAULT MLEVEL IS ATOM
GGCAT   IS UNS  AT  12
GGCAT   IS LOC  AT  19
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  19

STEREO ATTRIBUTES: NONE
L7           16 SEA FILE=REGISTRY SSS FUL L5

100.0% PROCESSED  22733 ITERATIONS                    16 ANSWERS
SEARCH TIME: 00.00.03
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Second search done on this structure which more closely represents claim 1.

Nitrogen at node 5 must be connected to 3 non-hydrogen atoms

```
=> fil caplu; d que nos l8

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Searched by Barb O'Bryen & Toby Port

FILE COVERS 1967 - 10 Oct 2000 VOL 133 ISS 16
FILE LAST UPDATED: 9 Oct 2000 (20001009/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

Now you can extend your author, patent assignee, patent information, and title searches back to 1907. The records from 1907-1966 now have this searchable data in CAOLD. You now have electronic access to all of CA: 1907 to 1966 in CAOLD and 1967 to the present in CAPLUS on STN.

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L5              STR
L7          16 SEA FILE=REGISTRY SSS FUL L5
L8          15 SEA FILE=CAPLUS ABB=ON  PLU=ON  L7

=> s l8 not (127) ← previously printed
L28         14 L8 NOT L27

=> d ibib abs hitstr l28 1-14; fil caold; d que nos 19; file home

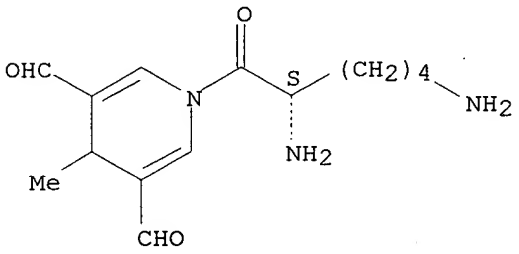
L28 ANSWER 1 OF 14  CAPLUS  COPYRIGHT 2000 ACS
ACCESSION NUMBER:        1998:27818  CAPLUS
DOCUMENT NUMBER:         128:214588
TITLE:                   Formation of a dihydropyridine derivative as a
                         potential cross-link derived from malondialdehyde in
                         physiological systems
AUTHOR(S):               Slatter, David A.; Murray, Martin; Bailey, Allen J.
CORPORATE SOURCE:        Division of Molecular and Cellular Biology, Collagen
                         Research Group, University of Bristol, Langford,
                         Bristol, BS40 5DS, UK
SOURCE:                  FEBS Lett. (1998), 421(3), 180-184
                         CODEN: FEBLAI; ISSN: 0014-5793
PUBLISHER:               Elsevier Science B.V.
DOCUMENT TYPE:           Journal
LANGUAGE:                English
AB  Malondialdehyde is a major oxidn. product of lipids which is capable of
    crosslinking the collagen of the cardiovascular system. Identification of
    cross-links usually involves degradative procedures. In this paper, we
    use a novel, direct, approach using NMR to identify early and labile
    products. Initial model studies show that malondialdehyde reacts with
    lysine to form a dihydropyridine deriv. rather than the unstable
    imidopropene Schiff base previously reported. The aldehydes on the
    pyridine ring could react further to cross-link collagen and stiffen the
    aorta, thereby promoting further glycation, a process that would be
    accelerated in diabetes.
IT  204385-24-0          Searched by Barb O'Bryen & Toby Port
```

RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(formation of a dihydropyridine deriv. as a potential cross-link derived from malondialdehyde in physiol. systems)

RN 204385-24-0 CAPLUS

CN 3,5-Pyridinedicarboxaldehyde, 1-(2,6-diamino-1-oxohexyl)-1,4-dihydro-4-methyl-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L28 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1990:459074 CAPLUS

DOCUMENT NUMBER: 113:59074

TITLE: Hydrazino-bridged annulenes. 7. Synthesis of diethyl 6H-9b,9c-diazacyclopenta[cd]phenalene-5,7-dicarboxylate

AUTHOR(S): Flitsch, Wilhelm; Lewinski, Ulrike; Temme, Robert; Wibbeling, Birgit

CORPORATE SOURCE: Org. Chem. Inst., Univ. Muenster, Muenster, D-4400, Fed. Rep. Ger.

SOURCE: Liebigs Ann. Chem. (1990), (7), 623-5
CODEN: LACHDL; ISSN: 0170-2041

DOCUMENT TYPE: Journal

LANGUAGE: German

OTHER SOURCE(S): CASREACT 113:59074

GI For diagram(s), see printed CA Issue.

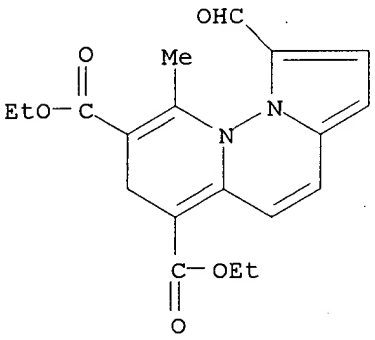
AB The 1,4-dihydropyridine I was obtained from 1-aminopyrrole and subsequent Vilsmeier reaction gave the aldehyde II which could be transformed into the tricyclic aldehyde III in a repeated Vilsmeier reaction. Final cyclization was achieved with NaOEt yielding the extremely unstable IV.

IT **126579-52-0P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation) (prepn. and cyclization of)

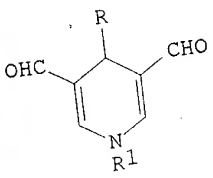
RN 126579-52-0 CAPLUS

CN 7H-Pyrido[1,2-b]pyrrolo[2,1-f]pyridazine-6,8-dicarboxylic acid, 1-formyl-9-methyl-, diethyl ester (9CI) (CA INDEX NAME)



Searched by Barb O'Bryen & Toby Port

L28 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1989:39336 CAPLUS
DOCUMENT NUMBER: 110:39336
TITLE: Fluorescent 1,4-dihydropyridines. The malondialdehyde connection
AUTHOR(S): Nair, Vasu; Offerman, Rick J.; Turner, Gregory A.; Pryor, Alton N.; Baenziger, Norman C.
CORPORATE SOURCE: Dep. Chem., Univ. Iowa, Iowa City, IA, 52242, USA
SOURCE: Tetrahedron (1988), 44(10), 2793-803
CODEN: TETRAB; ISSN: 0040-4020
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 110:39336
GI



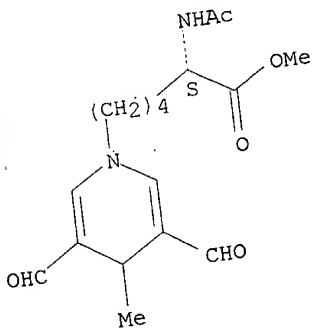
I

AB Under suitable conditions, malondialdehyde is capable of modifying amino acid residues to novel, highly fluorescent 1,4-dihydropyridines, e.g., I (R = Me, Et, Bu, Ph, CH2CHO; R1 = Gly-OMe, Gly-OH, Ser-OMe, Ala-OMe, Met-OMe, H, CH2CO2Me). The structures are assigned by UV, mass spectrometry, high-field NMR, and x-ray crystallog. The mechanism of these transformations, which is fully discussed, involves the Michael reaction of alkylidenemalondialdehydes with enaminals, both of which are produced as detectable intermediates. These findings may be of significance in explaining some of the biol. chem. of malondialdehyde. The transformation also provides a new approach to the synthesis of a wide range of light-stable 4-arylated-1,4-dihydropyridines of potential interest as calcium channel antagonists.

IT **105597-88-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and UV and fluorescence spectra of)

RN 105597-88-4 CAPLUS
CN 1(4H)-Pyridinehexanoic acid, .alpha.-(acetylamino)-3,5-diformyl-4-methyl-, methyl ester, (S)- (9CI) (CA INDEX NAME)

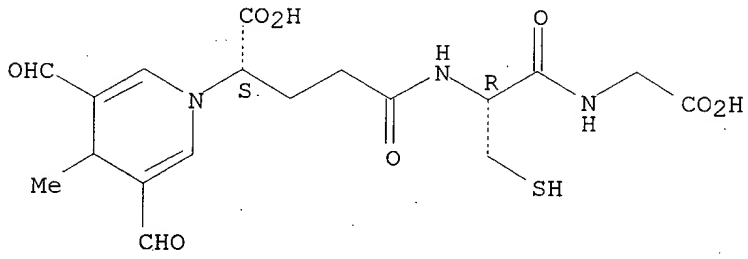
Absolute stereochemistry.



Searched by Barb O'Bryen & Toby Port

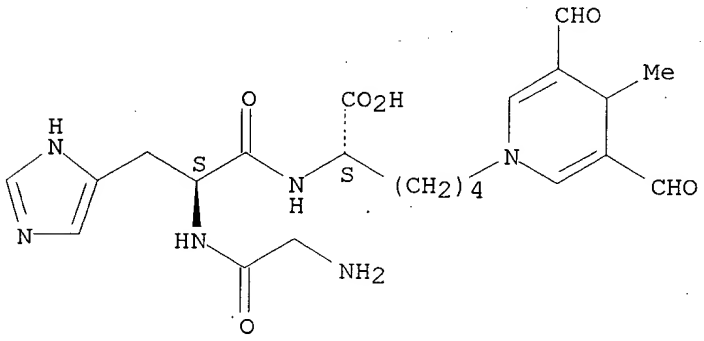
IT **118311-31-2P 118311-32-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
RN 118311-31-2 CAPLUS
CN Glycine, N-[N-[4-carboxy-4-(3,5-diformyl-4-methyl-1(4H)-pyridinyl)-1-oxobutyl]-L-cysteinyl]-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

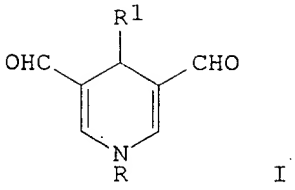


RN 118311-32-3 CAPLUS
CN L-Norleucine, 6-(3,5-diformyl-4-methyl-1(4H)-pyridinyl)-N-(N-glycyl-L-histidyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L28 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1987:19014 CAPLUS
DOCUMENT NUMBER: 106:19014
TITLE: Novel fluorescent 1,4-dihydropyridines
AUTHOR(S): Nair, Vasu; Offerman, Rick J.; Turner, Gregory A.
CORPORATE SOURCE: Dep. Chem., Univ. Iowa, Iowa City, IA, 52242, USA
SOURCE: J. Am. Chem. Soc. (1986), 108(26), 8283-5
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 106:19014
GI



I

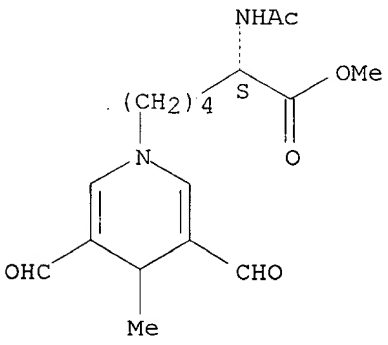
AB Fluorescent 1,4-dihydropyridines I [R = CH2CO2Me, R1 = Me, Et, C4H9, Ph; R = CH2CO2H, R1 = Me, Et; R = CH(CH2OH)CO2Me, (CH2)4CH(NHAc)CO2Me, CH(CH2CH2SMe)CO2Me, R1 = Me; R = CHMeCO2Me, R1 = C4H9] were prepd. by the Michael reaction of CH2(CHO)2 with amino acids RNH2 and aldehydes R1CHO under aq. acidic conditions. These reactions may be significant in explaining the biol. chem. of CH2(CHO)2.

IT **105597-88-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 105597-88-4 CAPLUS

CN 1(4H)-Pyridinehexanoic acid, .alpha.-(acetylamino)-3,5-diformyl-4-methyl-, methyl ester, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L28 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1985:74468 CAPLUS

DOCUMENT NUMBER: 102:74468

TITLE: Asymmetric reduction of ethyl benzoylformate with chiral NADH model systems: mechanistic and stereochemical consideration of the reactions based on the complexation properties of the model compounds

AUTHOR(S): Amano, Masaki; Baba, Naomichi; Oda, Junichi; Inouye, Yuzo

CORPORATE SOURCE: Inst. Chem. Res., Kyoto Univ., Uji, 611, Japan

SOURCE: Bioorg. Chem. (1984), 12(4), 299-311
CODEN: BOCMBM; ISSN: 0045-2068

DOCUMENT TYPE: Journal

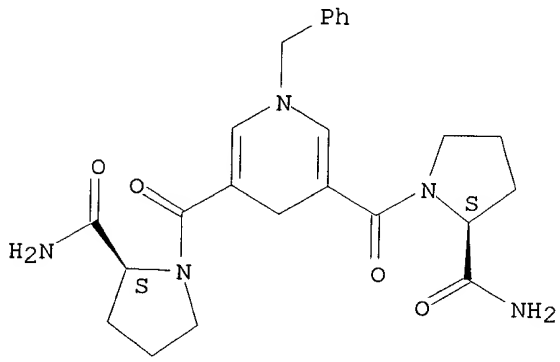
LANGUAGE: English

AB Asym. redns. of Et benzoylformate were conducted by use of NADH model compds. with C1 or C2 symmetry in the presence of Mg perchlorate. NADH model compds. which form 2:1 chelation complexes with Mg2+ showed the dependence of optical yield on the reaction conversion. The stereochem. behavior of the model compds. were classified into 3 reaction types on the basis of the component ratio in the chelation complex between the reductants and Mg2+.

Searched by Barb O'Bryen & Toby Port

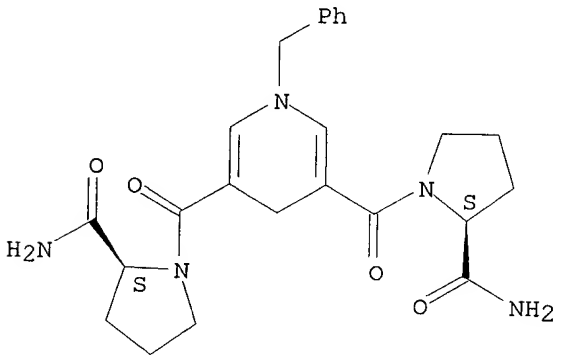
IT **76030-82-5**
RL: RCT (Reactant)
(Et benzoylformate redn. by, in magnesium presence, asymmetry of)
RN 76030-82-5 CAPLUS
CN 2-Pyrrolidinecarboxamide, 1,1'-[[1,4-dihydro-1-(phenylmethyl)-3,5-pyridinediyl]dicarbonyl]bis-, [S-(R*,R*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



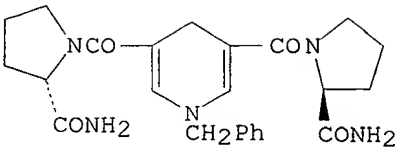
IT **76030-82-5DP**, magnesium complexes
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, Et benzoylformate asym. redn. in relation to)
RN 76030-82-5 CAPLUS
CN 2-Pyrrolidinecarboxamide, 1,1'-[[1,4-dihydro-1-(phenylmethyl)-3,5-pyridinediyl]dicarbonyl]bis-, [S-(R*,R*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L28 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1984:511366 CAPLUS
DOCUMENT NUMBER: 101:111366
TITLE: Stereochemical behavior of an NADH model compound carrying L-prolinamide at 3,5-positions
AUTHOR(S): Amano, Masaki; Baba, Naomichi; Oda, Junichi; Inouye, Yuzo
CORPORATE SOURCE: Inst. Chem. Res., Kyoto Univ., Uji, 611, Japan
SOURCE: Agric. Biol. Chem. (1984), 48(5), 1371-2
CODEN: ABCHA6; ISSN: 0002-1369
DOCUMENT TYPE: Journal
LANGUAGE: English
Searched by Barb O'Bryen & Toby Port

GI



I

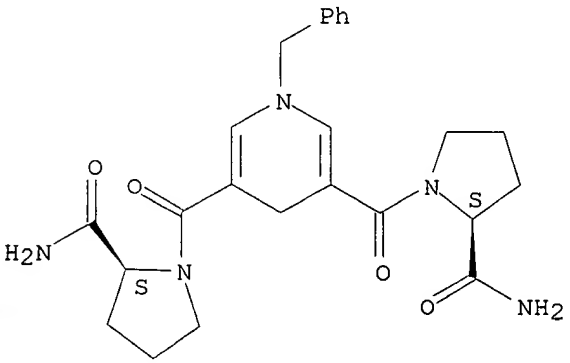
AB The stereochem. behavior of title NADH model I in the asym. redn. of PhCOCO2Et in the presence of Mg(ClO4)2 to give PhCH(OH)CO2Et (II) was studied. The % enantiomeric excess (e.e.) went from 13.6% (S)-II to 41.7% (R)-II upon increasing the amt. of Mg2+. I formed 2 types of complexes with the metal at Mg2+/I = 0.5 and 2. At Mg2+/I = 0.5 the e.e. was higher (30%) at the early stage of the reaction and decreased linearly as the reaction period increased. The H transfer reaction may not be a single kinetic process but may involve some feedback interactions of the products on the steric course, which may not be operative at Mg2+/I = 2.

IT **76030-82-5**
RL: RCT (Reactant)
(redn. by, of Et benzoylformate in presence of magnesium, stereochem. of)

RN 76030-82-5 CAPLUS

CN 2-Pyrrolidinecarboxamide, 1,1'-[[1,4-dihydro-1-(phenylmethyl)-3,5-pyridinediyl]dicarbonyl]bis-, [S-(R*,R*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L28 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1981:64990 CAPLUS

DOCUMENT NUMBER: 94:64990

TITLE: Asymmetric reduction with L-proline amide derivatives of 1,4-dihydronicotinamide

AUTHOR(S): Baba, Naomichi; Oda, Junichi; Inouye, Yuzo

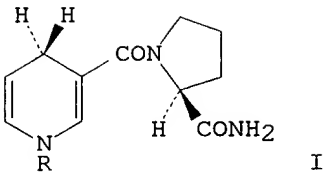
CORPORATE SOURCE: Inst. Chem. Res., Kyoto Univ., Kyoto, Japan

SOURCE: J. Chem. Soc., Chem. Commun. (1980), (17), 815-17
CODEN: JCCCAT; ISSN: 0022-4936

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

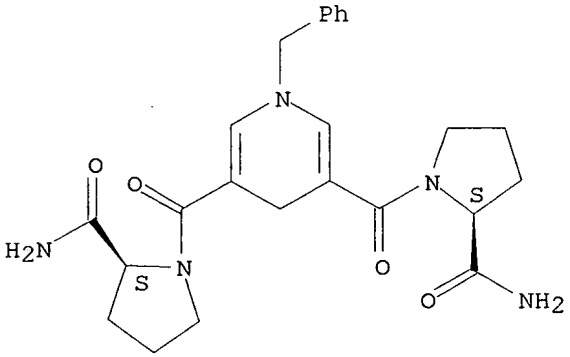
AB The Mg(ClO4)2-, ZnCl2-, and CoCl2-catalyzed asym. redn. of PhCOCO2Et with NADH model dihydronicotinamides (I, R = Ph, CONHCH2Ph) gave R-PhCH(OH)CO2Et (II). E.g., PhCOCO2Et with I (R = Ph) [Mg(ClO4)2, MeCN, under N, 50.degree., 7 days] gave 84% II of optical purity 83.2%. The asym. yields of II were greatly affected by the catalyst metal species and the N-substituent of the nicotinamide; with I (R = Ph) Mg(ClO4)2, ZnCl2, and CoCl2 (room temp., 12 days) gave 79, 5, and 14% II, resp., whereas with I (R = CONHCH2Ph) these catalysts gave 19, 33, and 59% II, resp.

IT **76030-82-5**
RL: PRP (Properties)
(redn. by, of Et benzoylformate, stereospecificity of metal dication-catalyzed)

RN 76030-82-5 CAPLUS

CN 2-Pyrrolidinecarboxamide, 1,1'-[[1,4-dihydro-1-(phenylmethyl)-3,5-pyridinediyl]dicarbonyl]bis-, [S-(R*,R*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L28 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1975:547489 CAPLUS
DOCUMENT NUMBER: 83:147489
TITLE: Cephalosporin derivatives
INVENTOR(S): Ochiai, Michihiko; Aki, Osami; Morimoto, Akira; Okada, Taiichi
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan
SOURCE: Japan. Kokai, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 49072288	A2	19740712	JP 1972-116042	19721117

GI For diagram(s), see printed CA Issue.

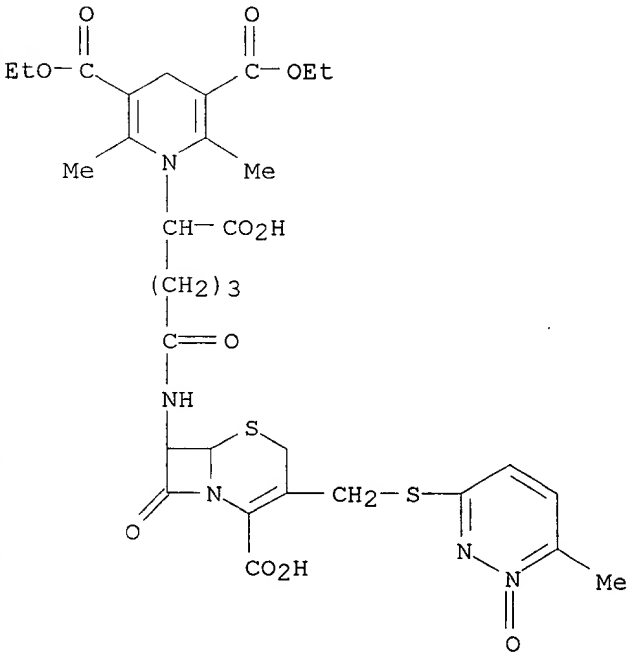
Searched by Barb O'Bryen & Toby Port

AB I was converted to 7-imido halide or 7-imido thioether, which was treated with 2-thienylacetic acid to give II. II is a bactericide against bacteria including Proteus morganii. Thus, 2.7 g I di-Na salt, 50 ml CH2Cl2, 2.8 g C5H5N, and 5.33 g Me3SiCl was treated at -30.degree. for 2 hr with 6 ml C5H5N, and 4.1 g PCl5 and the product treated with 3.8 g 2-thienylacetyl chloride and Et3N to give II Na salt. I Na salt (16.25 g) was treated at pH 7 with 39 ml 37% HCHO and 52.5 ml AcCH2CO2Et to give 20.5 g III. III was converted to II similarly.

IT **55441-15-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with trimethylchlorosilane and phosphorus pentachloride and thienylacetyl chloride)

RN 55441-15-1 CAPLUS

CN 3,5-Pyridinedicarboxylic acid, 1-[1-carboxy-5-[[2-carboxy-3-[[(6-methyl-1-oxido-3-pyridazinyl)thio]methyl]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl]amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, 3,5-diethyl ester, [6R-(6.alpha.,7.beta.)]-[partial]- (9CI) (CA INDEX NAME)



L28 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1975:441538 CAPLUS
DOCUMENT NUMBER: 83:41538
TITLE: Extraction of N-blocked amino acids from aqueous solutions
INVENTOR(S): Robinson, Colin; Walker, Derek
PATENT ASSIGNEE(S): Glaxo Group Ltd., Engl.
SOURCE: Ger. Offen., 37 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2436772	A1	19750220	DE 1974-2436772	19740731

Searched by Barb O'Bryen & Toby Port

DE 2436772	C2	19860306		
GB 1479141	A	19770706	GB 1973-36498	19740730
NL 7410293	A	19750204	NL 1974-10293	19740731
FR 2239473	A1	19750228	FR 1974-26655	19740731
SE 7409886	A	19750320	SE 1974-9886	19740731
DK 7404086	A	19750324	DK 1974-4086	19740731
JP 50076003	A2	19750621	JP 1974-87087	19740731
JP 58029299	B4	19830622		
ZA 7404905	A	19750924	ZA 1974-4905	19740731
AU 7471880	A1	19760205	AU 1974-71880	19740731
AT 7406283	A	19760715	AT 1974-6283	19740731
AT 335606	B	19770325		
ES 428799	A1	19760916	ES 1974-428799	19740731
SU 578863	D	19771030	SU 1974-2051820	19740731
HU 173065	P	19790228	HU 1974-GA165	19740731
BE 818367	A1	19750203	BE 1974-147180	19740801

PRIORITY APPLN. INFO.: GB 1973-36498 19730801

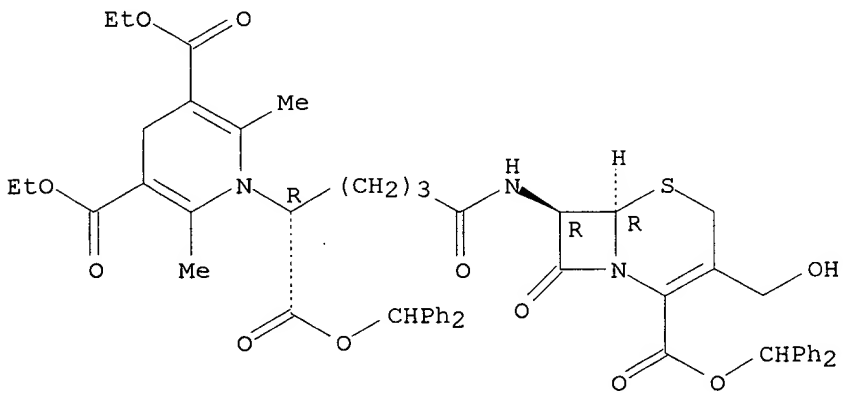
AB N-Blocked amino acids (the form comprising also N-blocked peptides), esp. penicillins and cephalosporins in which free amino acids are blocked, were extd. from aq. solns. by treating the solns. with a diazoalkene in the presence of a hydrophobic org. solvent; in the org. solvent, a soln. of an ester of the N-blocked amino acids is obtained. The extractive esterification was carried out by decreasing the pH of the neutral or basic soln. with strong acids. Thus, penicillin G K salt 7.8 g in 100 ml H2O was added to a soln. of diphenyldiazomethane 4 g in 75 ml CH2Cl2; the mixt. was stirred for 15 min at 10.degree. and its pH brought to 3.5 with H3PO4. The soln. was sepd. and the solvent layer was washed with 100 ml H2O, 100 ml 5% NaHCO3, and 100 ml H2O again, 18.5 ml peracetic acid was stirred into the soln. at 10.degree. during 15 min and the mixt. was further stirred for 30 min and then again washed in the sequence as above. After the solvent was evapd. in vacuum, diphenylmethyl-(3S, 5R, 6R)-2,2-dimethyl-6-phenoxyacetamidopenam-3-carboxylate-1-oxide was crystd. from hot iso-PrOH.

IT **55881-83-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and extn. of, from aq. soln.)

RN 55881-83-9 CAPLUS

CN 3,5-Pyridinedicarboxylic acid, 1-[1-[(diphenylmethoxy)carbonyl]-5-[[2-[(diphenylmethoxy)carbonyl]-3-(hydroxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl]amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, diethyl ester, [6R-[6.alpha.,7.beta.(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



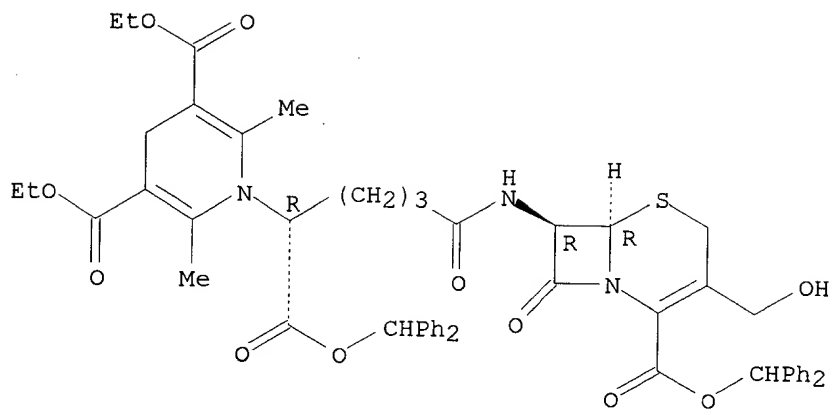
Searched by Barb O'Bryen & Toby Port

L28 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1975:410112 CAPLUS
DOCUMENT NUMBER: 83:10112
TITLE: N-Deacylization of 7-acylamido-3-hydroxymethylcephalosporin derivatives
INVENTOR(S): Robinson, Colin; Walker, Derek
PATENT ASSIGNEE(S): Glaxo Group Ltd., Engl.
SOURCE: Ger. Offen., 38 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2436771	A1	19750220	DE 1974-2436771	19740731
DE 2436771	C2	19851010		
GB 1459212	A	19761222	GB 1973-36497	19740730
SE 7409887	A	19750203	SE 1974-9887	19740731
SE 431754	B	19840227		
SE 431754	C	19840607		
NL 7410295	A	19750204	NL 1974-10295	19740731
DK 7404087	A	19750401	DK 1974-4087	19740731
DK 146853	B	19840123		
DK 146853	C	19840806		
JP 50076089	A2	19750621	JP 1974-87088	19740731
JP 63026112	B4	19880527		
FR 2254574	A1	19750711	FR 1974-26657	19740731
ZA 7404904	A	19750827	ZA 1974-4904	19740731
ES 428800	A1	19761201	ES 1974-428800	19740731
AT 7406284	A	19770115	AT 1974-6284	19740731
AT 338973	B	19770926		
BE 818366	A1	19750203	BE 1974-147179	19740801
			GB 1973-36497	19730801

PRIORITY APPLN. INFO.:
GI For diagram(s), see printed CA Issue.
AB Cephemcarboxylates I (R = 2-thienyl, R1 = Cl, I, pyridinium iodide, pyridinium trifluoroacetate; R = 1-tetrazolyl, R1 = 5-methyl-1,3,4-thiadiazol-2-ylthio) and some of their S-oxides were prepd. by transacylating the deacetylcephalosporin I [R = HO2CCH(NH2)(CH2)3, R1 = OH (II)]. Thus the reactive groups of II, except the OH group, were protected, the protected products treated with PCl5, the imide chlorides treated with MeOH, and the imino ether hydrolyzed and treated with 2-thienylacetyl chloride to give I (R = 2-thienyl, R1 = Cl). The pyridinium salts were prepd. by iodinating I (R = 2-thienyl, R1 = Cl) and quaternizing.
IT **55881-83-9P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and transacylation of)
RN 55881-83-9 CAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1-[1-[(diphenylmethoxy)carbonyl]-5-[[2-[(diphenylmethoxy)carbonyl]-3-(hydroxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl]amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, diethyl ester, [6R-[6.alpha.,7.beta.(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



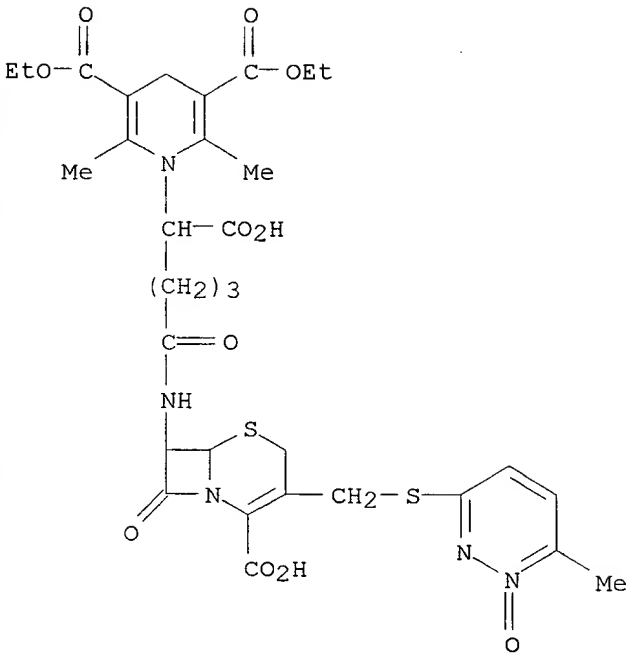
L28 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1975:156349 CAPLUS
DOCUMENT NUMBER: 82:156349
TITLE: 7-[5-Carboxy-5-(2,6-dialkyl-3,5-dicarboalkoxy-1,4-dihydropyrid-1-yl)valeramido]-3-[6-(2-oxido-3-methylpyridazinyl)thiomethyl]-3-cephem-4-carboxylic acids and their 7-deacylation via imino(thio)ethers
INVENTOR(S): Ochiai, Michihiko; Aki, Osami; Morimoto, Akira; Okada, Taiichi
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd.
SOURCE: Japan. Kokai, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 49075591	A2	19740720	JP 1972-118786	19721127

GI For diagram(s), see printed CA Issue.

AB The title acids, prepd. by treating 7-(5-carboxy-5-aminovaleramido)-3-[6-(2-oxido-3-methylpyridazinyl)thiomethyl]-3-cephem-4-carboxylic acid (I) with .beta.-keto esters and H2CO, are deaclated to 7-amino deriv. II via imino (thio)ethers. Thus, 800 ml aq. soln. contg. 16.25 g I Na salt was stirred with 52.5 ml Et acetoacetate and 39 ml 37% H2CO at pH 7 for 2 hr and the excess ester removed with Et2O. Extn. with CHCl3 at pH 2.5 gave 20.5 g III. III (2.54 g) in CH2Cl2 was treated with Me3SiCl-pyridine, PCl5-pyridine at -30.degree., and then MeOH to give 0.837 g II. Acylation with 2-thienylacetyl chloride gave IV.

IT **55441-15-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and deacylation of)
RN 55441-15-1 CAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1-[1-carboxy-5-[[2-carboxy-3-[[(6-methyl-1-oxido-3-pyridazinyl)thio]methyl]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl]amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, 3,5-diethyl ester, [6R-(6.alpha.,7.beta.)]-[partial]- (9CI) (CA INDEX NAME)



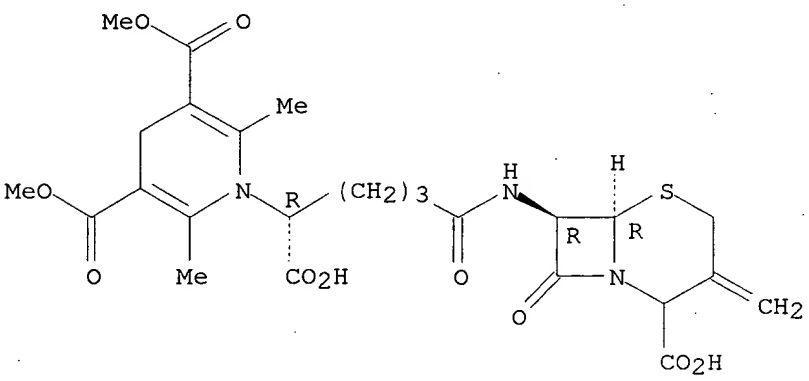
L28 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1974:477945 CAPLUS
DOCUMENT NUMBER: 81:77945
TITLE: Cephalosporin derivatives
INVENTOR(S): Ochiai, Michihiko; Aki, Osami; Morimoto, Akira; Okada, Taiichi
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd.
SOURCE: Japan. Kokai, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 49041395	A2	19740418	JP 1972-79354	19720808
JP 55012035	B4	19800329		

AB 3-Methylene-7.beta.-acylaminocepham-4-carboxylic acids were prepd. by converting 3-methylene-7.beta.-[5-carboxy-5-(2,6-dialkyl-3,5-bis(alkoxycarbonyl)-1,4-dihydro-1-pyridyl)valeramido]cepham-4-carboxylic acids to the iminoether or iminothioether followed by acylation. E.g., a mixt. of 11.34 g 3-methylene-7.beta.-(D-5-amino-5-carboxyvaleramido)cepham-4-carboxylic acid mono-Na salt, 600 mlH2O, 44 g MeCOCH2CO2Et, and 31.2 ml 37% HCHO was adjusted to pH 7 with N NaOH and stirred 2 hr to give 10.1 g 3-methylene-7.beta.-[D-5-carboxy-5-(2,6-dimethyl-3,5-bis(ethoxycarbonyl)-1,4-dihydro-1-pyridyl)valeramido]cepham-4-carboxylic acid (I). Treatment of I with CPh2N2 gave the dicarboxylic acid benzhydryl ester (II). A mixt. of 4.6 g II, 5.25 ml C5H5N, 4 g PCl5, and CH2Cl2 was stirred 3 hr at -15.degree., 50 ml MeOH added, stirred 20 hr at -20.degree. to + 5.degree. to give, after Amberlite XAD-II chromatog. 0.25 g Na 3-methylene-7.beta.-phenylacetamidocepham-4-carboxylate. Also, Na 3-methylene-7.beta.-(2-thienylacetamido)-cepham-4-carboxylate, -7.beta.-phenoxyacetamidocepham-4-carboxylate, and -7.beta.-(D-2-amino-2-phenylacetamido)cepham-4-carboxylates were prepd.

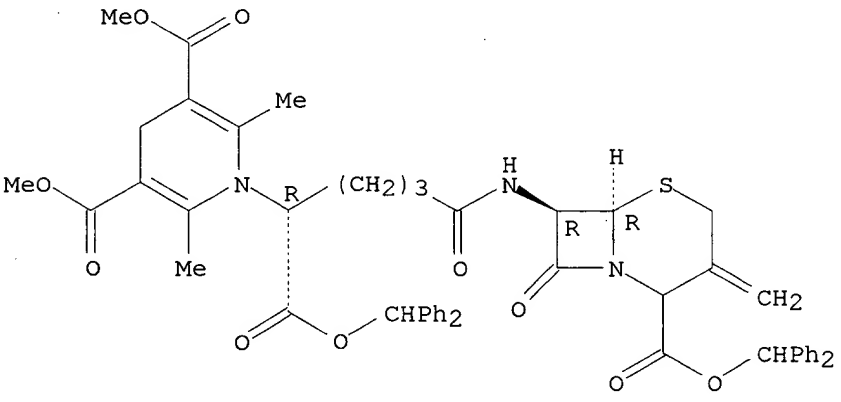
IT **53615-47-7P 53615-48-8P 53649-30-2P**
53649-31-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
RN 53615-47-7 CAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1-[1-carboxy-5-[(2-carboxy-3-methylene-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-7-yl)amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, 3,5-dimethyl ester, [6R-[6.alpha.,7.beta.(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



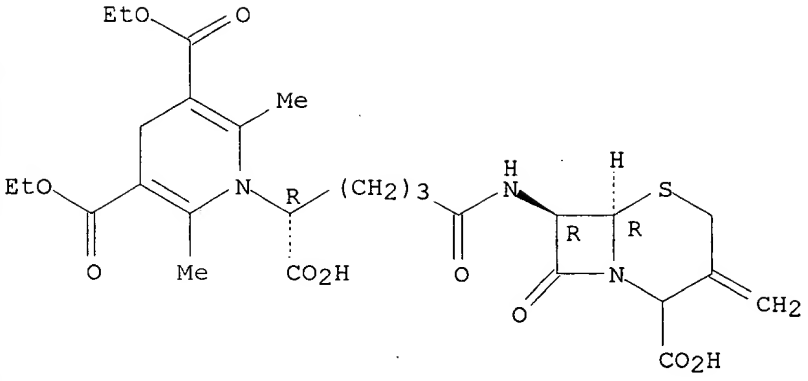
RN 53615-48-8 CAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1-[1-[(diphenylmethoxy)carbonyl]-5-[[2-[(diphenylmethoxy)carbonyl]-3-methylene-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-7-yl]amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, dimethyl ester, [6R-[6.alpha.,7.beta.(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



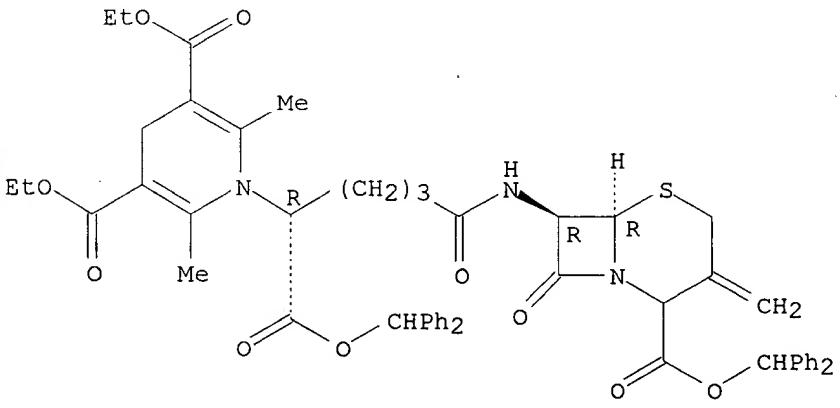
RN 53649-30-2 CAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1-[1-carboxy-5-[(2-carboxy-3-methylene-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-7-yl)amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, 3,5-diethyl ester, [6R-[6.alpha.,7.beta.(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 53649-31-3 CAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1-[1-[(diphenylmethoxy)carbonyl]-5-[[2-[(diphenylmethoxy)carbonyl]-3-methylene-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-7-yl]amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, diethyl ester, [6R-[6.alpha.,7.beta.(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L28 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1974:477943 CAPLUS
DOCUMENT NUMBER: 81:77943
TITLE: Cephalosporin derivative
INVENTOR(S): Ochiai, Michihilo; Aki, Osami; Morimoto, Akira; Okada, Taiichi
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd.
SOURCE: Japan. Kokai, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

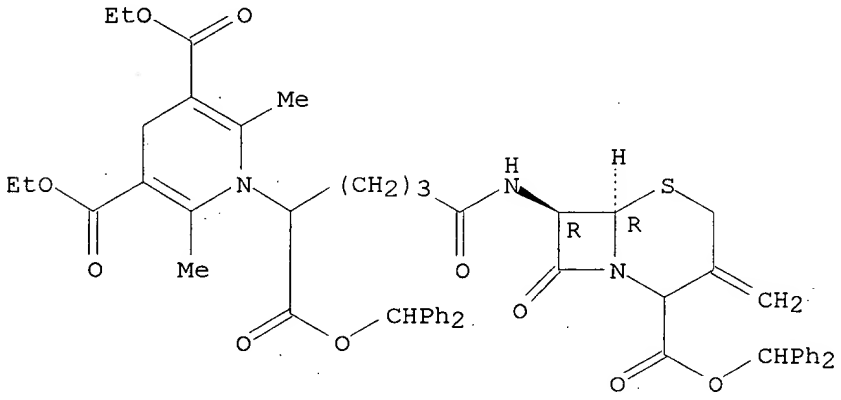
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 49031694	A2	19740322	JP 1972-76325	19720728
JP 55025196	B4	19800704		

AB 3-Methylene-7-aminocepham-4-carboxylic acid (I) was prepd. by deacylation of 3-methylene-7.beta.-[5-carboxy-5-(2,6-dialkyl-3,5-dicarbalkoxy-1,4-dihydropyrid-1-yl)valeramido]cepham-4-carboxylic acids. E.g., 44 g

AcCH2CO2Et and 31.2 ml HCHO were added to 11.2 g Na 3-methylene-7.beta.-(D-5-carboxy-5-aminovaleramido)cepham-4-carboxylate in H2O, and stirred 2 hr at room temp. to give 10.1 g3-methylene-7.beta.-[D-5-carboxy-5-(2,6-dimethyl-3,5-dicarbethoxy-1,4-dihydropyrid-1-yl)valeramido]cepham-4-carboxylic acid (II). A dicarboxylic acid benzhydryl ester (6.3 g) (obtained by treating II with Ph2CN2) was treated with 5 g PCl5 at -15.degree. then with a mixt of 20 ml CF3CO2H and 5 ml anisole to give 0.8 g I CF3CO2H salt.

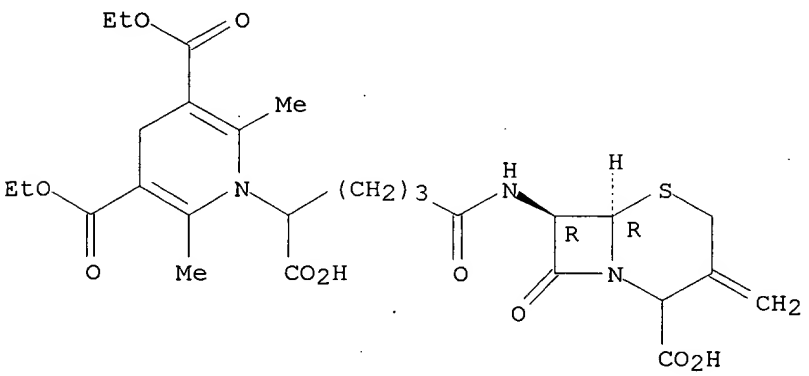
IT **53180-66-8P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and deacetylation of)
RN 53180-66-8 CAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1-[1-[(diphenylmethoxy)carbonyl]-5-[[2-[(diphenylmethoxy)carbonyl]-3-methylene-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-7-yl]amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, diethyl ester, [6R-(6.alpha.,7.beta.)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **53199-89-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and esterification of)
RN 53199-89-6 CAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1-[1-carboxy-5-[(2-carboxy-3-methylene-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-7-yl)amino]-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, 3,5-diethyl ester, [6R-(6.alpha.,7.beta.)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



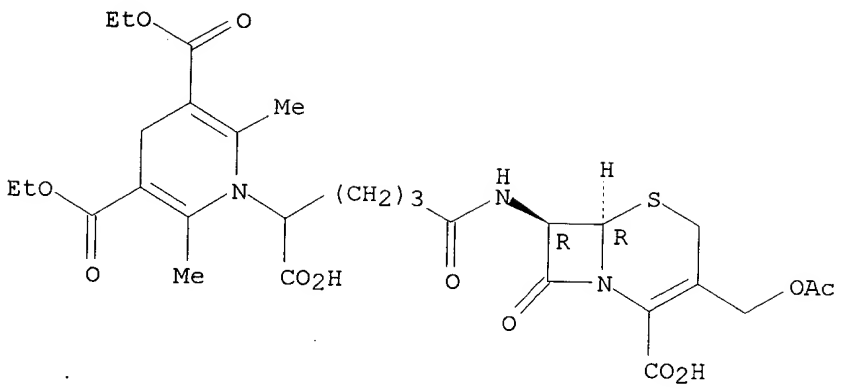
Searched by Barb O'Bryen & Toby Port

L28 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1973:29782 CAPLUS
DOCUMENT NUMBER: 78:29782
TITLE: 7.beta.-Amino-3-(acetoxymethyl)ceph-3-em-'-carboxylic acid
INVENTOR(S): Chapman, Philip Howard; Holligan, James Raymond
PATENT ASSIGNEE(S): Glaxo Laboratories Ltd.
SOURCE: Ger. Offen., 26 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2216589	A	19721026	DE 1972-2216589	19720406
GB 1391437	A	19750423	GB 1971-8988	19710407
US 3882108	A	19750506	US 1972-241087	19720404
NL 7204596	A	19721010	NL 1972-4596	19720406
FR 2136201	A5	19721222	FR 1972-12064	19720406
AT 7202968	A	19760115	AT 1972-2968	19720406
AT 332538	B	19761011		
CH 599223	A	19780512	CH 1972-5058	19720406
			GB 1971-8988	19710407

PRIORITY APPLN. INFO.:
GI For diagram(s), see printed CA Issue.
AB The title compd. (I) was prepd. in up to 83.54% yield by N-deacylation of 11 4-CO2H group-unprotected N-acyl derivs. II [R = HO2C(PhCONH)(CH2)4CONH or PhCH2CONH, etc.] in the known imide halide technique by prior treatment with PCl3 in CH2Cl2 in the presence of PhNMe2 under anhyd. conditions at <0.degree.. The resulting soln. (probably acid chloride) was stirred with PCl5 as imide chloride forming agent at -15.degree., MeOH as imino ether forming agent added at -40.degree., the mixt. stirred at -5.degree. and contacted with H2O to give I.
IT **39214-08-9**
RL: RCT (Reactant)
(deacylation of)
RN 39214-08-9 CAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1-[5-[[3-[(acetyloxy)methyl]-2-carboxy-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl]amino]-1-carboxy-5-oxopentyl]-1,4-dihydro-2,6-dimethyl-, 3,5-diethyl ester, monosodium salt, [6R-(6.alpha.,7.beta.)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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